



U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 2

May 15, 2019

BY ELECTRONIC MAIL

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Jay,

In a March 25, 2019, email attachment from NJDEP to EPA (Nickerson to Salkie, subject: LPR Baseline Ecological Risk Assessment, EPA and DEP Action Items), NJDEP requested that EPA respond to BERA comments submitted by NJDEP on 2/7/17 (actually dated 2/2/17) and 4/30/18, and comments submitted by NOAA on 4/6/18. With this letter, EPA is responding to NJDEP's comments as the only ones under NJDEP's purview.

The 3/25/19 note also stated, *"For all prior comments (pre-2019) please indicate which have already addressed and cite location in BERA or describe manner addressed. For comments not addressed, please describe why."* EPA has provided both NJDEP and NOAA with copies of all BERA comments, all response-to-comments, and all revised documents.

TRV ISSUE: Many of the comments made by NJDEP and NOAA throughout the BERA process have focused on the CPG's use of two sets of toxicity reference values (TRVs) to bound the risk estimates: one set proposed by EPA; and an alternative set proposed by CPG. All of the individual TRVs proposed by CPG were verified by EPA as having been appropriately derived from the cited literature. The use of two sets of TRVs is not inconsistent with EPA guidance/guidelines/policy and the inclusion of two sets of TRVs was discussed with all parties during the drafting of the BERA. EPA has had multiple calls/meetings/correspondence with NJDEP and NOAA regarding the use of two sets of TRVs in the BERA. Most recently, during a 4/4/19 meeting at the EPA Region 2 office in Edison, the TRV issue was addressed by Marc Greenberg (EPA HQ) as being acceptable to EPA and as having been used at multiple Superfund sites (e.g., Kalamazoo River, Newtown Creek, Upper Columbia River, Anniston PCB). The TRV issue has been fully addressed, and the following responses to NJDEP and NOAA comments will not address the TRV issue any further.

NJDEP 2/2/17 COMMENTS:

Subject to Joint Prosecution and Confidentiality Agreement – Not for Public Release – FOIA/OPRA Exempt

NJDEP's 2/2/17 comments on the 10/7/16 revised Draft LPRSA BERA (NJDEP called it Revision 2, but it was actually the first revision of the Draft BERA) consisted of 14 pages reiterating NJDEP's 1/13/16 comments on the initial draft of the LPRSA BERA, and then following some of those comments with a "response". The response was NJDEP's assessment of whether their initial comments had been addressed by the revised Draft BERA. NJDEP also added comments specific to the revised Draft BERA.

NJDEP comments 1 and 2: the NJDEP response focuses on TRVs

EPA response: TRVs have been addressed.

NJDEP comment 3: Executive Summary, NJDEP recommended removing statements about the use of non-urban reference conditions for invertebrates being less informative than the use of an urban reference condition.

EPA response: The statement was left in the report, but all LPRSA data were compared to all reference area data that was agreed to by EPA.

NJDEP comment 4: Section 2.2.1.1, NJDEP requested major benthic taxa for various reference locations.

EPA response: Benthic invertebrate taxonomic data was included in BERA Appendix P.

NJDEP comment 5: Section 2.2.2, NJDEP requested expansion of invertebrate and mollusk summaries.

EPA response: The text, figures, and tables in Section 2 were revised to expand and update macroinvertebrate collection data.

NJDEP comment 6: Section 2.4.4, NJDEP requested that wading bird diets be included.

EPA response: The text was revised to include the bird's prey.

NJDEP comment 7: Section 3, NJDEP noted that chemical contamination was not listed in the Problem Formulation.

EPA response: The text was revised to include chemical contamination.

NJDEP comment 8: Section 3.1, NJDEP notes that oysters have been observed, and should be included as ecological receptors.

EPA response: The BERA uses "bivalves" as a receptor, including oysters and other bivalve species.

NJDEP comment 9: Figure 4-5, NJDEP notes that a "remediated" area needed to be corrected.

EPA response: The figure was corrected.

NJDEP comment 10: Section 4.3.2, NJDEP states that the dioxin TEQ methodology only emphasized uncertainties and was misleading.

EPA response: The text was revised to no longer emphasize uncertainty, and it states that “*Despite some inherent uncertainties, the TEQ methodology provides a reasonable, scientifically justifiable, and widely accepted method for estimating risks...*”

NJDEP comment 11: Section 6, NJDEP deferred to NOAA with regard to the appropriateness of the assessments in the BERA.

EPA response: No response necessary.

NJDEP comment 12: Table 6-1, NJDEP noted a typographical error, and requested additional support data for toxicity testing.

EPA response: The requested revisions were made.

NJDEP comment 13: Section 6.2.6, NJDEP requested separate paragraphs to discuss uncertainties for each contaminant category.

EPA response: Uncertainties sections for all of Section 6 were revised.

NJDEP comments 14 through 28: These comments refer to TRVs and HQ derivations from TRVs

EPA response: TRVs have been addressed.

NJDEP comment 29: Section 7.1.4.4, NJDEP states that since site fish tissue concentrations were based on upper confidence limits, then comparisons to background tissue calculations should also be based on UCLs.

EPA response: The section was revised to include background EPCs where available, in some instances, there were not sufficient background samples to derive a UCL, and the maximum concentration value was used. The comparison to background includes discussion of both background UCL and maximum tissue concentrations.

NJDEP comment 30: Section 7.1.6, NJDEP requested that uncertainty statements be moved from this summary into the uncertainty section.

EPA response: The document was organized with a subsection for uncertainty in each section, with some repeat of key uncertainties. In this case, EPA agreed that the very small number of samples used for HQ calculations was worth repeating. EPA did not require the revision.

NJDEP comment 31: Section 7.2.2.2, NJDEP questioned the 5% sediment ingestion rate for eels.

EPA response: The 5% rate was from the literature and was found to be acceptable. NJDEP did not provide any additional literature values to evaluate.

NJDEP comment 32: Section 7.2.2.3, NJDEP objected to CPG’s inclusion of the 0-2cm depth interval.

EPA response: The 2-cm depth interval was subject to a formal dispute, which was resolved by stating that the 0-15cm depth interval would be used, and that the 0-2cm interval was not to be included in the BERA.

NJDEP comment 33: Table 7-20, NJDEP requested clarification of exposure areas for catfish and bass.

EPA response: The table was clarified in response to NJDEP's comment.

NJDEP comments 34 through 37: these comments refer to TRVs and HQs derived from TRVs.

EPA response: TRVs have been addressed.

NJDEP comment 38: Section 7.3.2, NJDEP requested the second paragraph be moved to uncertainties.

EPA response: The revision was made.

NJDEP comments 39 and 40: these comments refer to TRVs and HQs derived from TRVs.

EPA response: TRVs have been addressed.

NJDEP comment 41: Section 8.1.2.1, NJDEP requested consistency with the use of wet weight and dry weight in the food ingestion rates used in food chain modeling.

EPA response: The revision was made.

NJDEP comment 42: Section 8.1.2.3, NJDEP requested corrections to some inconsistencies noted in the text and in Table 8-4.

EPA response: The text and table were made consistent.

NJDEP comments 43 through 46: These comments refer to TRVs and HQs derived from TRVs.

EPA response: TRVs have been addressed.

NJDEP comments 47 and 48: Appendix C, EPC key, NJDEP requested additions to the lines of evidence.

EPA response: The revisions were made.

NJDEP comments 49 and 50: These comments refer to TRVs.

EPA response: TRVs have been addressed.

NJDEP comment 51: Appendix J, NJDEP commented on distinguishing physical from chemical stressors.

EPA response: The various physical and chemical stressors are described in Section 2 of the BERA. The revised text for Appendix J mentions both physical and chemical stressors but does not discuss them in depth. Because EPA felt that it was not necessary

to repeat an in-depth discussion of chemical versus physical stressors for the background appendix, EPA did not require a text revision.

NJDEP comment 52: Appendix J, Section 3, NJDEP noted that only LOAEL-based HQs were listed for background.

EPA response: Revisions were made to simply list the background sample summary statistics, with no comparison to NOAEL or LOAEL.

NJDEP comment 53: Appendix L, Attachment L3, NJDEP noted that many figures were missing data from background locations.

EPA response: Now Appendix L, Attachment L2, the figures have been revised to include missing data.

NJDEP comment 54: Appendix P, Section 3.1, NJDEP objected to the modifications that were made in the performance of the sediment toxicity tests.

EPA response: The uncertainties associated with the toxicity test modifications are discussed in the uncertainties section.

NJDEP comment 55: Appendix P, Section 3.2.2.1, NJDEP states that freshwater, non-urban reference data were available from the Mullica River for benthic invertebrate comparisons.

EPA response: After further review, it was determined that the Mullica River data set was of limited use, as it did not include the data required for the sediment quality triad.

NJDEP comment 56: Appendix P, Section 3.2.2.3, NJDEP does not concur with the comparison of toxicity test biomass data with urban reference area biomass data.

EPA response: EPA checked with EPA's researchers at ORD in Duluth, and they indicated that biomass could be included and the potential problems with comparisons of biomass could be discussed in the risk characterization or uncertainty section. EPA did not require revisions.

NJDEP comment 57: NJDEP listed items to discuss with EPA.

EPA response: No response necessary.

NJDEP 4/30/18 COMMENTS:

NJDEP's 4/30/18 comments on the 12/29/17 Revision 2 Draft LPRSA BERA consisted of 10 pages, broken into two parts: Part 1 was general comments on the BERA; and Part 2 responded to CPGs response-to-comment (RTC) document that was submitted along with the Revision 2 Draft BERA.

As noted above, the TRV issues have been resolved, and will not be further discussed.

NJDEP started the letter with a brief summary of the BERA and a bulleted list of four concerns. The bullets all refer to TRV issues or issues with HQs derived from TRVs that have been addressed.

Part 1, NJDEP comments on the Revision 2 Draft BERA. These comments were not numbered, but are addressed in order:

NJDEP comment: General Comment applicable to multiple sections. This comment refers to TRVs.

EPA response: TRVs have been addressed.

NJDEP comment: Section 6, Table 6-25 EFs for regulated metals does not highlight NOAEL HQs that exceed 1.

EPA response: The table is now Table 6-23, and the table notes state that bolded values are exceedance factors (EFs) ≥ 1 and shaded cells are EFs ≥ 1 based on LOAEL TRVs. All of the NOAEL EFs ≥ 1 are bolded, though it appears that the NOAEL EFs for arsenic were missed.

NJDEP comment: Section 6.3.6, Table 6-26, invertebrate tissue LOAEL HQs, the LOAELs that exceed 1 are not highlighted, and the NOAELs are not reported.

EPA response: The table is now Table 6-25, and the LOAELs that exceed 1 are bolded. The table is titled “Summary of invertebrate tissue LOAEL HQs”, and no NOAEL HQs are listed. However, Table 6-22 lists both the LOAEL and NOAEL HQs for invertebrate tissue.

NJDEP comment: Section 6.3.6, Table 6-27, invertebrate tissue LOAEL EFs for metals, none of the LOAELs that exceed 1 are highlighted, and the NOAELs are not reported.

EPA response: The table is now Table 6-26, and the LOAELs that exceed 1 are bolded. The table is titled “Summary of invertebrate tissue LOAEL EFs for regulated metals”, and no NOAEL EFs are listed. However, Table 6-24 lists both the LOAEL and NOAEL EFs for invertebrates.

NJDEP comment: Section 6.4 and Tables 6-28 and 6-29 show that COPEC/receptor pairs with LOAEL HQs >1 were proposed as preliminary COCs. However, NOAELs should be included.

EPA response: The text and tables (now Tables 6-27 and 6-28) show preliminary COCs based on LOAEL HQs. However, Table 6-22 and 6-24 list both the LOAEL and NOAEL HQs and EFs.

NJDEP comments: Sections 7.1.3, 7.1.3.1, and 7.1.3.2 comments all refer to TRVs

EPA response: TRVs have been addressed.

NJDEP comment: Section 7.1.4.1 tissue HQs, NOAELs are required for all COIs and receptors.

EPA response: LOAEL HQs are listed in Table 7-8, and NOAEL HQs are listed in Table 7-9.

NJDEP comments: Tables 7-8, 7-9, 7-10, 7-12, and 7-13 the LOAELs and NOAELs that exceed 1 are not highlighted.

EPA response: Now Tables 7-8, 7-9, 7-10, and 7-11 the NOAELs and LOAELs are bolded and highlighted. Discussions of “focal” and “non-focal” species have been removed, as all fish species are of concern.

NJDEP comment: Section 7.1.6, the text says there is a large amount of uncertainty associated with the results because of small sample size, and the statement should be moved to the uncertainty section.

EPA response: EPA did not require the revision.

NJDEP comment: Section 7.2.2.2, NJDEP questioned the 5% sediment ingestion rate for eels.

EPA response: The 5% rate was from the literature and was found to be acceptable. NJDEP did not provide any additional literature values to evaluate.

NJDEP comment: Table 7-20 has discrepancies in prey composition used to estimate dose for catfish and bass.

EPA response: The table has been clarified.

NJDEP comments: Sections 7.2.3.1, 7.2.4.1, and Table 7-25 comments refer to TRVs and HQs from TRVs.

EPA response: TRVs have been addressed.

NJDEP comment: Section 7.2.6 Summary text only discusses LOAEL HQs and should include NOAEL HQs.

EPA response: The SLERA included everything that exceeded screening levels. The BERA was used to refine that list to those COPECs that pose risk. The summary of findings was used to point out those contaminants that pose the greatest risk, and to point out the risk drivers. The BERA is a technical document that has to be read as a whole, and EPA does not rely only on the summary sections. Risk decisions will be made on the BERA results as a whole, including the NOAEL HQs.

NJDEP comment: Table 7-28 refers to TRVs

EPA response: TRVs have been addressed.

NJDEP comment: General comment Section 8, NJDEP questions the use of the term “preliminary COC”

EPA response: The use of “preliminary COCs” is defined in the BERA as “Preliminary COC were identified as those COPECs with HQs ≥ 1.0 based on any line of evidence

(LOE) and effect-level concentration (i.e. $HQ \geq 1.0$ based on a range of lowest-observed-adverse-effect levels [LOAELs] for tissue and diet LOEs, $HQ \geq 1.0$ based on acute or chronic surface water TRVs; $HQ \geq 1.0$ based on plant-specific sediment TRVs.)” The use of the term “preliminary” originated from a discussion between EPA and the CPG about including COCs and risk drivers in the BERA. The CPG wanted to include a separate section where COCs and PRGs were derived, however, EPA indicated that the BERA is not the place for this – COCs and PRGs are not identified until the FS and they are memorialized in the ROD. Thus, the term “preliminary COC” was developed to distinguish between compounds that were carried from the SLERA to the BERA (i.e., COPECs) and those that were identified in the BERA as needing to be carried forward to the FS (i.e., preliminary COCs). The BERA states that “preliminary COCs” will be further evaluated in the FS.

NJDEP comment: Section 8.1.4 risk characterization, NJDEP wants to see more detailed discussions of reach-specific NOAEL and LOAEL HQ exceedances. The comment also references Appendix G and the detailed reach-specific HQ results there.

EPA response: Additional reach-specific information was included in the text and tables.

NJDEP comment: Appendix J, background concentrations, the text states “Background values were determined for only COPEC-ecological receptor pairs with effects-based $HQs \geq 1.0$, as calculated in the BERA.” Only LOAEL HQs were used in the BERA, both NOAEL and LOAEL must be used.

EPA response: The background values were only determined for COPECs whose site-related COPEC/receptor pairs had LOAEL $HQs \geq 1$. If a site-related COPEC did not exceed the LOAEL HQ, the BERA did not utilize a comparison to background.

NJDEP comment: Appendix P, SQT LOEs, NJDEP notes that Section 5 of the RI (a separate document that was being reviewed concurrently with the Revision 2 Draft BERA) states that the biologically active zone in sediment is 0-2 cm. Appendix P also infers that a 0-2 cm depth profile is appropriate.

EPA response: All mentions of the 0-2 cm depth profile have been deleted. The only sediment depth profile in the BERA is 0-15 cm.

NJDEP comment: Appendix P, Section 2.3.1, Reference Data, NJDEP discusses the Mullica River data set as not being acceptable for use as a SQT background freshwater non-urban reference, but suggests that other data sets are available. NJDEP references possible data sets available from NOAA (R. Mehran).

EPA response: All NJDEP and NOAA freshwater non-urban data sets were thoroughly researched, and none were found to be appropriate.

NJDEP comment: Appendix P, Section 3.1 Methods, NJDEP does not agree with the modifications made to the sediment toxicity studies and did not want the toxicity study results to be used in quantitative assessment.

EPA response: The modifications to the toxicity tests were acceptable to EPA, and the uncertainties associated with the modifications were detailed in the BERA.

Part 2, NJDEP comments on the CPG's Responses to EPA's Comments on the Revision 2 Draft BERA. These comments were numbered, to correspond with the EPA comment number on the RTC document. The following comments are in order, but the comment numbers are not sequential because NJDEP only commented on some of the RTCs:

NJDEP comment 65: This comment refers to TRVs.

EPA response: TRVs have been addressed.

NJDEP comment 68: This comment refers to TRVs.

EPA response: TRVs have been addressed.

NJDEP comment 89: points out a typographical error in equation 8-2.

EPA response: The error was corrected.

Thank you for your comments.

Sincerely,

A handwritten signature in dark ink, appearing to read "Diane Salkie", written in a cursive style.

Diane Salkie, Remedial Project Manager
Lower Passaic River Study Area RI/FS